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Monthly Statistical Report

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NOVEMBER 1984

ESTIMATED U.S. PETROLEUM BALANCE

SUMMARY

Total products supplied to the domestic market rose 0.9% in November over year-earlier levels. Light product increases were responsible for the minor overall advance. Residual fuel oil deliveries, well below November 1983 levels, offset roughly half of these gains.

Recent-month increases in overall petroleum product demand have been considerably smaller than earlier in the year, paralleling gradual moderation of year-to-year increases experienced by the economy as a whole.

Crude oil production rates continued to show year-to-year increases. Imports rose over year-ago levels at roughly two-thirds October's rate. Inventories increased about 13 million barrels, about in line with the normal seasonal increase.

The number of active rigs rose 2% over last year. Wells reported drilled rose 20% over year-earlier levels during the third quarter and increased 14% in October but fell almost 8% in November.

PRODUCTS SUPPLIED [1/]

Gasoline

UP 0.7% OVER LAST NOVEMBER.

Deliveries of gasoline rose a minimal 0.7% from year-ago levels, about in line with the level of increases of the past several months.

Gasoline pump prices fell about one cent from prior-month levels, extending the almost uninterrupted downtrend of the past 3½ years. At this point, prices, when adjusted for inflation, are some 25% below the March 1981 high.

Price decreases have made a substantial contribution to increases in gasoline demand, but, during the 3½ year period starting in the spring of 1981, higher real disposable personal income, generated largely by rebounding economic activity, had at least an equal effect. It is estimated that the combination of these two factors would have raised current gasoline demand at least 10% since the spring of 1981. The substantial increases in engine efficiency that have occurred in the interim, however, have resulted in offsetting some 90% of that increase, reducing the increase in gasoline demand from 1981 levels to roughly 1%. That rate of increase is about the same as the recent trend of 1983/1984 increases, as gasoline demand did not start to rise on a sustained basis until the spring of 1983.

Unleaded's share of the gasoline market rose to 63% in November, almost seven percentage points above the year-earlier share. This is about twice the rate of advance experienced earlier in the year. It appears that the impact of high sales of new cars — resulting from the two-year old economic recovery — and the change in fleet composition it brought about is only now being fully felt.

Distillates

DELIVERIES UP 2%.

Distillate deliveries rose 66 MBD (2.3%) in November over year-ago levels. Distillate deliveries in November 1983, however, were some 75 MBD above trend, indicating that the true year-to-year change is in the 140 MBD range. With weather about 10% colder than a year ago, roughly a third of the true year-to-year increase was due to weather factors. While it is somewhat surprising that inventory replenishments should have occurred during periods of uncertainty and falling price levels, a good part of the remainder is apparently the result of inventory replenishments in secondary storage. Industry reports indicate that such storage near month-end was slightly ahead of last month—and considerably above year-earlier levels. Roughly-offsetting changes in truck and rail traffic levels, up about 3% for truck traffic and down 7% for rail traffic in October, are estimated not to have changed trends sufficiently in November to affect distillate deliveries to a significant degree.

Residual Fuel Oil

DOWN 10% VERSUS LAST NOVEMBER.

Deliveries of residual fuel oil were 134 MBD (9.8%) below last year's. Bunker fuel deliveries, which had been running some 30 MBD below 1983 levels for the first 8 months of this year, rose a similar amount in September (latest data available). With lower announced output rates in major producing countries, there is little likelihood, however, that worldwide petroleum trade, a major portion of overall shipping activity, improved in November.

Electric utility use of residual fuel oil fell about 115 MBD during the third quarter. Electricity generation, which increased less than 1% during the third quarter, rose more than 3% over last year in October and over 4% in November. But, with petroleum's share of input for electricity generation on a slide, we do not believe that the increase in generation was translated into higher residual fuel oil use; deliveries to utilities have shown year-to-year declines in six of the past seven months for which data are available.

Earlier this year there had been some indication that demand for residual fuel oil in the industrial sector was on the road to recovery. During the past few months, however, deliveries have again been on the decline. Some slowdown in the economy's growth rate undoubtedly contributed to that decline, as did the fact that, in the late fall of 1983, industrial sector purchases had already been recovering and had reached a somewhat higher level than in preceding months.

In addition, natural gas prices, relatively stable over the past year, have shown a slight downward trend recently, with many customers reportedly negotiating contract renewals at more favorable terms. Residual fuel oil prices, after experiencing some volatility in the late July-September period, remained relatively unaffected by the general downdrift in petroleum products. They ended November at slightly higher levels than late October's levels, possibly because of somewhat higher prices reportedly realized as a result of export shipments for use as refinery input and higher usage in the United Kingdom related to the coal strike.

Kerosine Jet Fuel

UP 19% OVER NOVEMBER 1983.

Deliveries of kerosine jet fuel climbed 19.4% in November, continuing the high year-to-year advance rate of the prior month. As happened in October, the year-to-year increase in November has been more than twice the roughly 9% increase in "miles flown" which is a good indicator of airline traffic. The disparity is perplexing, though one possible contributing factor may be that some portion of total fuel purchases may have found its way into storage maintained by airport operating companies.

Other Oils

DOWN 1/2% FROM LAST YEAR'S LEVELS.

"Other oils" were supplied at a 20 MBD (0.5%) lower rate in November than a year ago. There are definite signs of a slowdown in the chemical industry; sales increases during the third quarter reportedly were more modest than the rate experienced earlier in the year. Imports of chemical products have also been growing.

(In millions of B/D)	NOVEMBER ESTIMATES			YEAR-TO-DATE ESTIMATES		
	1984	1983	% Change	1984	1983	% Change
—Total domestic products supplied	15.6	15.5	0.9	15.7	15.1	4.1
—Motor gasoline supplied	6.6	6.6	0.7	6.7	6.6	1.3
—Distillate fuel oil supplied	2.9	2.9	2.3	2.8	2.6	8.0
—Residual fuel oil supplied	1.2	1.4	(9.8)	1.4	1.4	(2.1)

SUPPLY [1/]

Total supply rose 605 MBD over last November as a result of a 352 MBD increase in imports and 253 MBD increase in total domestic supply.

Production

UP ALMOST 1% OVER LAST YEAR.

Crude oil production continued to rise in November with almost a 1% increase over the year-ago level. While year-to-year increases have been small, the advance has been almost uninterrupted since late 1981, when crude production was running some 250 MBD less than currently. During November, increased production in Alaska, resulting mainly from higher output at Kuparuk, was the major factor in increased overall U.S. production, though lower 48 output also rose slightly.

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Imports

ROSE 7% OVER LAST NOVEMBER.

Total imports rose 352 MBD (7.0%) in November compared with the year-earlier level. In September (latest month available) Mexico continued to be the #1 source of imports into the U.S., followed by Venezuela, Canada, and the United Kingdom. Saudi Arabia occupied ninth position, compared with second spot last September.

The November level of imports was more than 100 MBD below October's on a seasonally adjusted basis. Presumably, October's higher rate of imports was caused by the substantial amounts of oil that reached U.S. shores that month which had been purchased during relatively price-stable late September and early October, following a prolonged period of production and price fluctuations. In addition, with inventories relatively stable, the recent moderation of the economic recovery has reduced petroleum demand growth, lessening the need for imports. As one example, imports of residual fuel oil have fallen at a rate during the past several months sufficient to fully offset the marked year-to-year increases of gasoline and distillates.

Inventories

IN LINE WITH THE NORMAL SEASONAL RISE.

Inventories rose about 13 million barrels over October levels, a roughly-normal increase for this time of year. Except for "other oils" and and gasoline, stocks are at levels similar to last year's. Almost half the November advance arose from a 7 million barrel increase in crude oil stocks, returning crude inventory levels into the long-standing 340-360 million barrel range. Gasoline inventories rose 12 million barrels, somewhat above the normal seasonal increase, partly because of continuing high distillate production levels and lesser gasoline demand increases. However, gasoline stocks still only represent a slightly-above-normal 37 days of supply. With production continuing at high levels, distillate inventories rose about 4 million barrels.

Operations

UTILIZATION CONTINUES IN MID-70 PERCENTAGE RANGE.

With operable capacity some 275 MBD lower than last year and input to distillation units about the same as a year ago, capacity utilization rose one percentage point above last November's.

Exploration

LITTLE RIG ACTIVITY CHANGE: WELLS REPORTED DRILLED INCREASED IN OCTOBER BUT FELL IN NOVEMBER.

The number of active rigs rose 2% over last year and, while recent levels are slightly ahead of early 1984's on a deseasonalized basis, they are actually somewhat below mid-year levels. Wells reported drilled rose 20% over year-earlier levels during the third quarter and 14% in October but fell almost 8% in November. Oil wells reported drilled fell 3% in November and gas wells more than 6%. A large decline in wells reported drilled in Texas accounted for the overall November decline.

Detailed in an accompanying article is the new methodology for reporting well drilling, which essentially switches from the presentation of well data by month reported to a month-of-completion basis.

(In millions of B/D)	NOVEMBER ESTIMATES			YEAR-TO-DATE ESTIMATES		
	1984	1983	% Change	1984	1983	% Change
—Total supply	16.7	16.1	3.8	16.5	15.8	4.9
—Crude production[2/]	8.9	8.8	0.9	8.8	8.7	1.0
—Crude oil imports[3/4/]	3.6	3.2	12.1	3.3	3.1	5.3
—Product imports	1.8	1.9	(1.7)	2.0	1.7	15.4

1/ Total supply, i.e., production plus imports adjusted for net stock change is equal to total products supplied from primary storage. Total products supplied from primary storage less exports is equal to total domestic products supplied. Information contained in this report is derived from information published in the API Weekly Bulletin and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions.

2/ Includes lease condensate.

3/ Beginning with January 1977, the U.S. Department of Energy began reporting crude oil imports as of the date of importation. Previously, this data, with the exception of Canadian crude imports, was reported as of the date it was received at the refinery. This change may affect both the level of crude oil imports and crude oil stocks. API estimates of these data may, therefore, differ slightly from those of the U.S. Department of Energy.

4/ API data do not include crude oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR (according to the U.S. Department of Energy, the SPR held approximately 443 million barrels as of November 30, 1984).

ESTIMATED UNITED STATES PETROLEUM BALANCE

(Daily Average in Thousands of 42 Gallon Barrels)

Products Supplied/Supply From Primary Storage	NOVEMBER			YEAR-TO-DATE		
	1984[1]	1983[2]	% Change	1984[3R]	1983[2]	% Change
Products Supplied:						
Total motor gasoline	6,648	6,603	0.7	6,685	6,601	1.3
Finished leaded motor gasoline*	2,488	2,911	(14.5)	2,727	2,984	(8.6)
Finished unleaded motor gasoline*	4,160	3,692	12.7	3,958	3,617	9.4
Naphtha-jet	224	190	17.9	224	207	8.2
Kerosine-jet	978	819	19.4	945	826	14.4
Distillate fuel oil	2,940	2,874	2.3	2,838	2,628	8.0
Residual fuel oil	1,228	1,362	(9.8)	1,375	1,405	(2.1)
All other oils[4]	3,847	3,867	(0.5)	3,863	3,591	7.6
Reclassified[5]	- 229	- 213	7.5	- 217	- 165	31.5
Total domestic products supplied	15,636	15,502	0.9	15,713	15,093	4.1
Exports	644	679	(5.2)	688	749	(8.1)
Total products supplied	16,280	16,181	0.6	16,401	15,842	3.5
Supply:						
Domestic production:						
Crude oil[6]	8,850	8,770	0.9	8,805	8,715	1.0
Natural gas liquids	1,738	1,641	5.9	1,638	1,560	5.0
Other supply[7]	739	663	11.5	840	666	26.1
Total domestic supply	11,327	11,074	2.3	11,283	10,941	3.1
Imports:						
Crude oil, total	3,550[10/]	3,166[10/]	12.1	3,266[10/]	3,103[10/]	5.3
Canadian	308	304	1.3	321	272	18.0
Other	3,242	2,862	13.3	2,945	2,831	4.0
Products, total	1,841	1,873	(1.7)	1,976	1,713	15.4
Residual fuel oil	499	780	(36.0)	678	704	(3.7)
Other	1,342	1,093	22.8	1,298	1,009	28.6
Total imports	5,391	5,039	7.0	5,242	4,816	8.8
Total supply	16,718	16,113	3.8	16,525	15,757	4.9
Stock change, all oils	+ 438	- 68	XXXX	+ 124	- 85	XXXX
Refinery Operations						
Input to crude oil distillation units	12,215	12,223	(0.1)	12,255	11,996	2.2
Operable capacity	16,074	16,349	(1.7)	16,089	16,699	(3.7)
Refinery utilization (%)[8]	76.0%	74.8%	1.6	76.2%	71.8%	6.1
Crude oil runs	12,063	12,004	0.5	12,090	11,727	3.1

Stocks (millions bbls.)	1984		1983[2]	% Change from ...	
	Nov. 30[9]	Oct. 31[9]	Nov. 30	Previous Month	Year Ago
Crude oil[10/]	341.5	334.4r/	341.4	2.1	-
Unfinished oils	106.9	110.8r/	109.1	(3.5)	(2.0)
Total motor gasoline**	242.7	231.1r/	235.9	5.0	2.9
Finished leaded motor gasoline*	89.2	83.1r/	96.4	7.3	(7.5)
Finished unleaded motor gasoline*	111.2	109.0r/	99.6	2.0	11.6
Naphtha-jet	6.8	6.5	6.4	4.6	6.3
Kerosine-jet	39.4	40.2r/	39.2	(2.0)	0.5
Distillate fuel oil	160.3	156.0r/	161.2	2.8	(0.6)
Residual fuel oil	50.2	50.9	54.2	(1.4)	(7.4)
All other oils	168.1	172.8r/	190.9	(2.7)	(11.9)
Total all oils	1,115.9	1,102.7r/	1,138.3	1.2	(2.0)

1/ Based on API estimated data converted to a monthly basis.
2/ Source: U.S. Department of Energy.
3/ Source: January-September, U.S. Department of Energy, October-November, API.
4/ Includes crude losses.
5/ Beginning with January 1981, U.S. Department of Energy began using a new data collection system which encompasses a method to ascertain the amount of product reclassified during the production phase. So that there will be no double counting of these volumes, they are subtracted from total domestic products supplied.
6/ Includes lease condensate.
7/ Includes Unaccounted-for crude oil, Refinery input of other hydrocarbons, and Processing gain.
8/ Represents "Input to crude oil distillation units" as a percent of "Operable capacity."
9/ Derived by interpolating API weekly stocks data.
10/ Data do not include oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR.
R/ Revised.
* Included in motor gasoline.
** Includes finished leaded, finished unleaded, and motor gasoline blending components stocks.

The New Format for API Drilling Statistics

Summary

Currently, API's Monthly Drilling Report and Quarterly Review of Drilling Statistics present data by month reported to API rather than by month of actual well completion. Since the lag between completion and reporting has progressively lengthened in recent years, the correspondence of reported wells with actual drilling activity has continued to lessen. For this reason, starting in 1985, API will begin publishing data by actual completion month rather than on the present as-reported basis. Moreover, since the most recent data will be incomplete because of the reporting lag, API intends to estimate actual completions and footage on a quarterly basis. These estimates will include data by depth category and well type.

The Lag Between Completion and Reporting

Fiqure 1 plots total well completions from 1970 to 1979 on the basis of when they were reported to API (the series published in the past) and on an actual completion-month basis. The series follow roughly the same path, but, because of the reporting lag, the two series have at times diverged.

The lag in reporting has grown over time, as Figure 2 shows. In 1970, for example, about 90 percent of the completions were reported within three months (that is, for example, wells completed in January and reported through April). By 1979, only 73 percent were reported within that time; 93 percent were reported after a lag of twelve months. The data strongly indicate that the reporting lag has continued to lengthen since that time.

Figure 3 shows the shift in lag structure again, but in a different form. The graph compares the pattern of reporting in 1970, 1973, 1976 and 1979, averaged over the given year. As the lag lengthened, the shape of the reporting curve shifted. It is believed that the shape of this curve provides information useful in estimating actual completions and footage based on partial data.

The New Format

API will continue to publish the Monthly Drilling Report (MDR) and Quarterly Review of Drilling Statistics (QRD), but in significantly altered formats. The MDR will display cumulative reported wells and footage for oil and gas wells and dry holes by month of completion for the last two to three years. In addition, it will show the total wells and footage reported to API for the most current month (as in the current MDR), but additionally showing how these reported data are distributed by month of actual completion.

The QRD, as well, will display drilling data by quarter of completion, rather than on the as-reported basis used in the past. Disaggregation of the data by geographic region will also be included on this basis as well as U.S. totals by depth class. Historical data, in addition to the two to three years published in the QRD, will also be available.

Because the most recent data will be incomplete, figures in the MDR and QRD will tend to show an apparent drop-off in activity in the most recent periods, regardless of actual activity levels. Thus, in order to obtain meaningful measures of current activity, estimates must be made from the available data. For this reason, API intends to include, as part of the QRD, regression estimates of quarterly completions and footage by well type and depth category for the most recent two to three years. A split between exploratory and development drilling activity will also be estimated.

Estimates for first quarter 1985 will be included in the first edition of the new QRD, due to be published in May. In addition, estimates by quarter for 1983 and 1984 will also be presented. As more data become available, API will publish revised estimates in subsequent QRD issues. Current research demonstrates that estimates of these data can be made with acceptable accuracy, and that accuracy improves as more data become available. Such estimates will put API drilling data into an easily usable form, while the raw data in the QRD will also allow analysts who prefer to make their own estimates to do so. The API estimates are expected to provide more accurate indicators of drilling activity by well type and depth interval than have previously been available.

Figure 1

WELLS REPORTED VERSUS ACTUAL COMPLETIONS

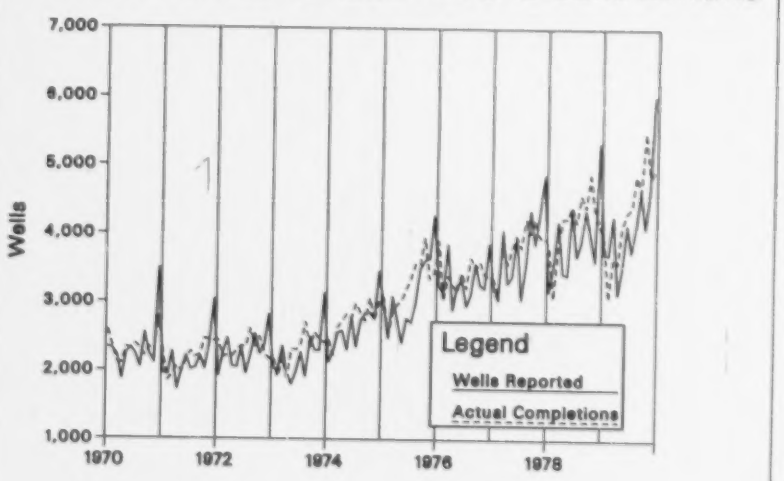

Figure 2

PERCENT OF TOTAL WELLS REPORTED AT VARIOUS LAGS

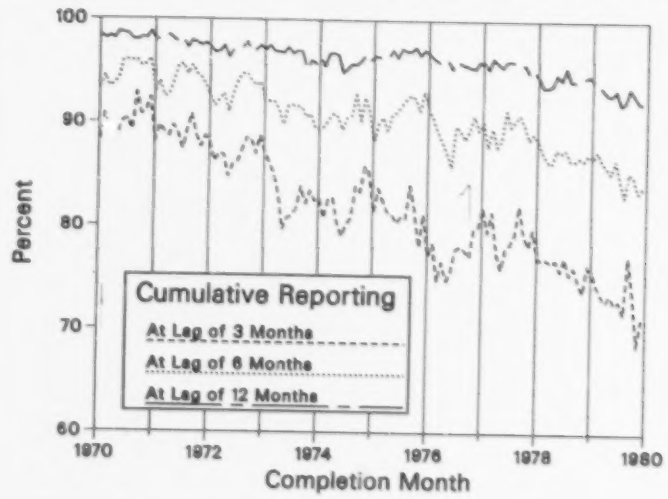

Figure 3

PERCENT OF WELLS REPORTED AT VARIOUS LAGS